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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,772	10/23/2003	Manabu Oumi	S004-4199 (DIV)	6711

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EXAMINER

ANGEBRANDT, MARTIN J

ART UNIT PAPER NUMBER

1756

DATE MAILED: 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/691,772	OUMI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Martin J. Angebranndt	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 3/6/06 & 10/23/03.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5,6,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5,6,21 and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/770,072.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

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1. The applicant should amend the specification to correctly identify the status of the parent application as --, now US patent 6,697,322. - -

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5,6,21 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5, the claims should indicate that the entire surface is covered and that the material into which the metal particulates are dispersed.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 22 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no basis for the language describing the light blocking layer as surrounding the layer containing the dispersed metal particles. .

While the applicant has a basis for coating the entire surface with the layer including the dispersed metal particulate, it does not describe a localized application of this and so does not support language describing an isolated feature as the only occurrence of this.

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 5 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima et al. '531, in view of Miyauchi et al. JP 56-030722 or Hori JP 55-153331.

Fukushima et al. '531 teaches a process for forming a mask for forming an optical recording medium as illustrated in figures 1-3. The examiner notes that inspections of the mask are carried out frequently in the process as evidenced by figure 1. The form the mask, a Cr layer is formed on a glass substrate, is coated with a photoresist, which is patterned and used as a mask during the etching of the Cr layer. The resist is then removed to yield the mother mask (5/59-7/37). The use of other metals for the light blocking layer is disclosed including Al, Ni, Co, Ag, Au, Cu, Ti and the like. (6/13-23).

Miyauchi et al. JP 56-030722 teach the correction of defects in photomasks where metal powders, such as Cr, Ni, Fe, Co and the like are placed on the defect and melted using a laser to correct the defect by filling in the undesired opening in the light blocking pattern. (see abstract and figures)

Hori JP 55-153331 teaches the correction of defects in photomasks where metal powders, such as Al, Pb, Sn, Zn and the like are placed on the defect and melted using a laser to correct the defect by filling in the undesired opening in the light blocking pattern. This includes the filling of pinholes (see abstract)

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It would have been obvious to one skilled in the art to modify the process of Fukushima et al. '531 as set forth above by correcting any defects in the light blocking pattern found during the inspection processes using known means, such as the application of powders and laser heating taught by Miyauchi et al. JP 56-030722 or Hori JP 55-153331 as useful in repairing photomasks.

The examiner holds that the pinholes are small features entirely surrounded by the light blocking material (ie Cr) and as the metal pattern on the mask is for an optical recording medium, the mask pattern is readable using near field optics.

8. Claims 5,6 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima et al. '531, in view of Miyauchi et al. JP 56-030722 or Hori JP 55-153331, further in view of Pierrat '187.

Pierrat '187 teaches the correction of defects in photomasks where a defect is overfilled and the deposition uses a laser in the process (5/8-15). The defect is overfilled as shown in figures 8 and 9, trimmed on the edge as shown in figures 10 and 11 and then planarized as shown in figure 12 and 13 using a polishing step (5/38-45). The presence of pinholes in Cr masks is disclosed. (2/21)

In addition to the basis provided above, the examiner holds that it would have been obvious to one skilled in the art to modify the processes resulting from the combination of Fukushima et al. '531, with Miyauchi et al. JP 56-030722 or Hori JP 55-153331 by adding the planization taught by Pierrat '187 to improve the quality of the mask with a reasonable expectation of realizing a useful Cr mask.

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9. Claims 5 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 02-116043, in view of Fukushima et al. '531 combined with Miyauchi et al. JP 56-030722 or Hori JP 55-153331.

JP 02-116043 teaches an optical recording medium substrate, which is coated with a reflective layer. A photoresist is used to form the desired patterns and the pattern is transferred into the reflective layer using ion milling/etch processes. The resist is then removed and a protective layer is overcoated. (see abstract and figures 1a-d). Figure 2 a-e shows the corresponding lift off process.

It would have been obvious to one skilled in the art to modify the process of JP 02-116043 as set forth above by correcting any defects in the light blocking pattern found during the inspection processes using known means, such as the application of powders and laser heating taught by Miyauchi et al. JP 56-030722 or Hori JP 55-153331 as useful in repairing photomasks with a reasonable expectation of forming a useful optical recording medium based upon the use of the same techniques for repairing photomask patterns for optical recording media, which are also formed of metals as taught by Fukushima et al. '531.

10. Claims 5 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobowitz et al. '054, in view of Fukushima et al. '531 combined with Miyauchi et al. JP 56-030722 or Hori JP 55-153331.

Jacobowitz et al. '054 teach a process for forming a blank storage disk with metal tracking patterns (abstract). The substrate is provided with a photoresist, which is patterned and then overcoated with aluminum, the resist is then lifted off and overcoated with a

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semitransparent layer, which may be PMMA. (10/28-11/48). The layers 35 are recording layers and can be used in a multilayer recording medium (12/15-21).

It would have been obvious to one skilled in the art to modify the process of Jacobowitz et al. '054 as set forth above by correcting any defects in the light blocking pattern found during the inspection processes using known means, such as the application of powders and laser heating taught by Miyauchi et al. JP 56-030722 or Hori JP 55-153331 as useful in repairing photomasks with a reasonable expectation of forming a useful optical recording medium based upon the use of the same techniques for repairing photomask patterns for optical recording media, which are also formed of the same metals as taught by Fukushima et al. '531, Miyauchi et al. JP 56-030722 or Hori JP 55-153331.

11. Claims 5,6 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over either (Jacobowitz et al. '054 or JP 02-116043), in view of Fukushima et al. '531 combined with Miyauchi et al. JP 56-030722 or Hori JP 55-153331, further in view of Pierrat '187.

In addition to the basis provided above, the examiner holds that it would have been obvious to one skilled in the art to modify the processes resulting from the combination of either (Jacobowitz et al. '054 or JP 02-116043), in view of Fukushima et al. '531 combined with Miyauchi et al. JP 56-030722 or Hori JP 55-153331 by adding the planization taught by Pierrat '187 to improve the quality of the reflective layer mask with a reasonable expectation of realizing a useful reflective tracking pattern with uniform reflectivity.

12. Claims 5 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobowitz et al. '054, in view of Ichihara et al. 61-153843, Shigeta et al. JP 59227488 or Sakaguchi et al. JP 07-098484.

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Ichihara et al. 61-153843 teaches optical recording layers comprising silver and gold particles dispersed in a polymeric resin coated on an aluminum substrate.

Shigeta et al. JP 59227488 teaches an optical recording layer comprising metal or semiconductor particles dispersed in a metal oxide. The dispersion of Al, Cu, Ag, or Au in various dielectrics is shown in table 3 on page 7.

Sakaguchi et al. JP 07-098484 teaches metallic particles of gold, copper or silver dispersed in silica and used as an optical recording medium.

It would have been obvious to one skilled in the art to modify the teachings of Jacobowitz et al. '054 by using other recording layers known in the optical recording media field, such as the Ag, Cu or Au particles dispersed in various matrices taught by Ichihara et al. 61-153843, Shigeta et al. JP 59227488 or Sakaguchi et al. JP 07-098484 with a reasonable expectation of forming a useful optical recording medium.

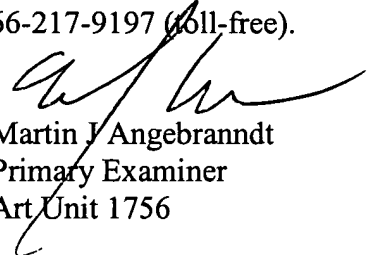
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranntdt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J Angebrannt  
Primary Examiner  
Art Unit 1756

05/9/2006